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Questions as Dialogue Games. The Pragmatic Dimensions of "Authentic" Questions

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Abstract
Questions, and more specifically authentic questions, are at the core of dialogue-based learning and teaching. However, what is a question, and how can it be authentic? This paper addresses this problem by analyzing the distinct dimensions of questions, showing how their pragmatic nature is interwoven with the syntactic and semantic one, and how it can be grasped only by considering their dialogical functions. Questions are maintained to be proposals of different dialogue games (or types), pursuing specific interactional purposes, and potentially contributing to learning processes in different ways. By understanding how questions shape different dialogues it is possible to ask more suitable questions to the questioner's goals. In this framework, the dichotomy between authentic and inauthentic questions becomes a strategic choice between different types of dialogical possibilities.

Keywords Questions · Dialogues · Authenticity · Argumentation · Pragmatics

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Introduction

The notion of dialogue is at the heart of modern and contemporary approaches to teaching (Alexander 2008; Kuhn 2010; Topping and Trickey 2014; Schwarz and Baker 2016). Through dialogue students not only acquire factual knowledge but also learn how to interact with it (Scardamalia and Bereiter 2006), by interpreting facts and evidence and using them to solve problems, develop new concepts, defend a viewpoint, or explain phenomena (Kuhn 2019). The engagement of students as active participants in the learning process underlies different dialogical approaches, such as inquiry-based learning, argumentation and education (Osborne 2010; Kuhn et al. 2014) or dialogic teaching (Reznitskaya 2012; Alexander 2018; Howe et al. 2019). These approaches focus on structures of educational dialogues, development of students' argumentation, the scaffolding process, and different dialogical

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settings and formats. However, in these accounts the relationship between dialogue and questions seems to be almost neglected.

In philosophy of education, the shift from a teacher-centered approach to a learner-centered one corresponds to the passage from a “static” education, focused on “the acquisition of what is already incorporated in books and in the head of elders” to a goal- and dialogue-oriented one, aimed at the acquisition of skills as means of pursuing objectives that matter to the students themselves (Dewey 1997, 19). This view of education is strictly related to an approach to language and discourse that is not merely regarded in terms of transfer of information, but as an *activity* that can have different goals. Wittgenstein’s notion of language games captured how language (or more precisely utterances) can be used for engaging in actions and joint actions, such as speculating or reporting about an event, giving and obeying orders (Wittgenstein 1958, *Philosophical Investigations* I, 23). This approach has been developed in contemporary pragmatic and argumentation theories in terms of “dialogue types,” which attempt to map the different intertwining joint goals that the interlocutors pursue and negotiate (Walton 1989a, 2010).

The most fundamental issue in the analysis (and development) of educational dialogues is the awareness that it is not possible to consider educational dialogues as a uniform category. This is because educational dialogues lack a unique predefined goal (such as exchanging opinions or testing understanding or memory). Teacher-student exchanges are multifaceted activities that involve decision-making, dilemma resolution, discovery of new solutions or ways of thinking, reflecting on concepts and reasons provided by others (Haynes 2008, 143). The phenomenon described as “dialogue” is actually result of a continuous negotiation, proposal, and acceptance of different games – or imposition of a specific one, as in the “recitation dialogue.”

The variety of goal-directed activities (Walton 1989b) defining the cooperative inquiry in which students are trained to develop their own original thinking is essentially rooted in dialogical prompts (Lone and Burroughs 2016, 36–38). Questions – and more importantly types of questions (Clegg 1987) – become a fundamental tool for promoting in different ways students’ learning and thinking (Sanders 1966; Taba 1966) and an essential tool in dialogic teaching (Edwards-Groves 2014; Edwards-Groves et al. 2014).

In education, a classic dichotomy has defined the contemporary study of pedagogical questions, namely the contrast between authentic and inauthentic questions (Nystrand et al. 2003; Schaffalitzky 2022). While the latter correspond to the classical test or recitation interaction (Mehan 1979), in which the teacher knows the answer in advance and assesses the students’ knowledge, the former are regarded as instruments for engaging students in interactions that stimulate their reasoning, interests, and curiosity (Scardamalia and Bereiter 1991; Wilkinson and Hye Son 2009; Turgeon 2015). But what is question authenticity, precisely?

The literature provides mostly generic or partial answers, emphasizing different dimensions of questions and more importantly the need for a pragmatic approach thereto. On the one hand, “open questions” are commonly associated with authenticity, and recommended as moves promoting students’ reasoning (Edwards-Groves 2014). However, an open question is a semantic notion – therefore corresponding to only one dimension of such a complex phenomenon. On the other hand, the interactional dimension of questions (such as “say more” or “press for reasoning,” see Michaels and O’Connor 2015) has been highlighted as crucial for understanding what prompts are more productive for dialogues promoting

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reasoning (such as accountable talk) (Michaels et al. 2008) and thus authentic activities. Thus, in order to address the problem of question authenticity, it is necessary first to analyze two basic concepts on which it is grounded – the notion of question, and its interactional (pragmatic) dimension.

This paper intends to outline a dialogical approach to authentic questions. In Sect. 1, we will present how the literature has answered the question of what question authenticity is. In Sect. 3, we discuss the definition of "question," in particular the distinction between its semantic, syntactic, and pragmatic aspects. This analysis will show how the grammatical dimension cannot be analyzed independently of the functional/pragmatic one. However, as the literature in linguistics and education underscores (Sect. 4), such functions should be determined without considering the dialogues that a question proposes. In Sect. 5 we argue that questions can be conceived of as proposals of distinct dialogue games or types (Walton 1989a), guiding and constraining the interlocutor's dialogical behavior in specific ways. In Sect. 6 this approach will be illustrated through excerpts from classroom dialogues, which show how the problem of question authenticity hides another issue, namely whether the dialogue that a question proposes can help develop the abilities and reasoning that constitute the (most important) goal of education (Bloom 1956).

Authentic Questions: What is Authenticity?

The notion of authentic question as presently discussed in education was introduced by Nystrand and Gamoran (1991), who addressed the distinction between dialogic vs. monologic sequences (Nystrand et al. 2003; see Chin 2007 for the analysis of Socratic questions) and the problem of how to develop dialogic teaching strategies. The relevance of authenticity can be understood by considering the prototypical format of educational dialogues (Mehan 1979; Lemke 1990, Chap. 1), represented by the Initiation (Opening) – Response (Answering) – Evaluation (Follow-up) pattern (IRE) (Howe and Abedin 2013). The IRE was grounded on a basic presupposition (Lemke 1990, 7): "the teacher is already supposed to know the Answer," and questions are intended to test the student's knowledge. This exchange represents a kind of recitation (Mehan 1979; Nystrand and Gamoran 1991), in which students play a minor supporting role: they are required to respond occasionally to the teacher's periodic questions, demonstrating how much they have learnt and guessing the expected reply. This type of interaction has an extremely negative effect on learning: "remembering and guessing supplant thinking" (Nystrand 1997, 5).

The IRE pattern, together with its limitations, crucially hinges on a trigger, i.e., the question. A purely testing question does not open the space of discussion, which is instead closely associated with students' learning and memory (Sanders 1966; Nystrand et al. 2003). Instead of opening a dialogical classroom interaction, testing questions result in exchanges commonly classified as "monological" (Bakhtin 1984; Nystrand, Wu, Gamoran, Zeiser, & Long, 2003; Reznitskaya 2012). In this monologue, the teacher acts on the assumption that there is only one valid perspective (Wells 2007) – their own –, which clearly does not encourage the development of students' intellectual capacities and own understanding (Kubli 2005; Jenkins and Lyle 2010).

The notion of authentic question has therefore become crucial, emerging as one of the measures of dialogicity and the key to developing dialogic teaching. Authenticity is defined in three different ways (Schaffalitzky 2022). The first definition is negative, as the opposite

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of the so-called unauthentic or recitation question (also called closed question, see Boyd and Markarian 2011). Here, authentic questions are defined (1) by the speaker's *lack of knowledge* of the prespecified answer (Nystrand and Gamoran 1991, 264) and (2) by their goal, which *does not* consist in *testing* the recall and display of the acquired knowledge (Nystrand et al. 2003, 139). The second definition is positive and characterized by the essential function of the question, that is *requesting information* that the speaker does not hold (Schaffalitzky 2022, 31) such as in case of philosophical questions or puzzles (Boyd and Markarian 2011). Such questions signal also the teacher's *interest* in what students think (Nystrand and Gamoran 1991; Boyd and Markarian 2011). The third definition addresses the scalarity of authenticity: a question can be classified as more or less authentic depending on the degree of freedom left to the interlocutor, measured in terms of *answers considered acceptable*. While inauthentic questions can be answered correctly only in one specific way, quasi-authentic ones leave to the interlocutor a range of acceptable answers (see the related notion of open question, Boyd and Markarian 2011; Reznitskaya 2012; Topping and Trickey 2014).

In addition to these three definitions, authenticity has been addressed indirectly by Widdowson in terms of appropriateness to the linguistic context and communicative situation. Questions whose answer is already known by the teacher are situationally unnatural, as their communicative function does not correspond to the normal, ordinary one (Widdowson 1978, 6–7). Widdowson noticed that "unnatural" or inauthentic questions result in limited learning effects (Widdowson 1972, 1978, 18): students learn only a narrow dimension of the subject matter (in language teaching, the signification, i.e. meaning in isolation from its context), ignoring other crucial aspects (the value, i.e. the meaning acquired when language is used to performed different communicative acts).

According to Widdowson's approach the problem of authenticity is inherently related to the learning goal, whether acquiring knowledge or developing skills and learning how to use them (Taylor 1994). A classroom is its own communicative setting, defined by an epistemic unbalance between teacher and students, and more importantly by the fact that agents communicate for and about new knowledge. Authenticity would thus be a notion relative to the communicative setting: in classrooms, authenticity concerns the opportunity for public and interpersonal sharing and practice of contents, knowledge, skills, and abilities (Breen 1985, 68). The risk of inauthentic questions can then be framed in terms of suitability to the goal of the learning context (and the learners' goals), which can be fully or only partially pursued (Widdowson 1978, Chap. 3).The question about authenticity becomes essentially intertwined with the overall goal of communication between students and teachers (such as developing specific abilities), and whether the dialogue that a question promotes is merely confined within the boundaries of a classroom or instead mirrors a real life activity.

Authentic Questions: What is a Question?

The definition of authenticity leads to a multifaceted analysis of questions: they are described in terms of the freedom left to the interlocutor (and thus their closedness), but also considering their functions, effects, and communicative goals. What is a question, then, and how can we analyze it?

In linguistics and philosophy of language the term "question" is commonly used to refer to two distinct levels: the textual (pragmatic) corresponding to a move or an action aimed at

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eliciting an answer, and the syntactic corresponding to the interrogative sentence commonly (prototypically) used to manifest questions (Schegloff 1984, 30–31). At the pragmatic level the speech act of requesting an answer is highly unspecific. The prototypical function of questions (called the standard or genuine question) is eliciting an answer or information (Groenendijk and Stokhof 1984, 5; Athanasiadou 1991; Huddleston 1994; Ilie 2015, 3); however, other purposes are possible, such as quizzing the interlocutor, drawing interest on a subject matter, seeking confirmation, expressing emotions, or finding solutions to a problem (Athanasiadou 1991).

From a semantic perspective, the meaning of a question is commonly defined as the set of its *possible* answers (Roberts 2012, 10–11). In this perspective it is possible to distinguish between two types of questions: the alternative or polar (or whether) questions (for example, "Does John walk?" or "Does John live in Austria or Germany?"), and the variable questions (also called x-questions or wh-questions) (for example, "Who walks?"). While the former present explicitly or implicitly alternative propositions as possible answers (the truth or falsity of the proposition or the given alternatives), the latter involve a specific variable (*objectum questionis*) that needs to be provided to complete the incomplete description of a state of affairs (*datum questionis*) (Huddleston 1994; Gobber 2011). This semantic distinction is also referred to in terms of closed vs. open form questions (Kearsley 1976; Al-Adeimi and O'Connor 2021). While closed-form questions are defined by a predetermined set of answers (and thus can be used for developing specific ideas or obtaining a specific answer), open-form questions are characterized by an open set (Robinson and Rackstraw 1972, 17–18; Huddleston 1994), which is particularly helpful for encouraging different possible answers and viewpoints (Hess 2009, 38).

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This openness of a question, however, is a gradual property as it depends on the relationship between the description and the variable. In some cases, the variable is a specific type of nominal phrase (for example, an *x* that is an individual potentially able to walk); in other cases, the *datum questionis* corresponds to other phrases or even the whole clause ("What happened?"; "What do you think of…?"). In this latter case the question does not determine the nature of the answer, but simply constraints it. These open questions do not determine a category of answers (Kiefer 1988, 260) and can be answered in different ways, including sets of propositions interconnected in specific ways or texts (Kiefer 1988, 262; Gobber 2011, 16).

The semantic dimension of questions is inextricably connected to their pragmatic aspect, as the *possibility* of an answer needs to be distinguished from its *acceptability*, a criterion that exceeds the syntactic and semantic notions of well-formedness. For example, not all the possible answers to the following question asked by a tourist in Paris can be considered acceptable (Grewendorf 1983, 76):

(1). Tourist: "Where is the Eiffel Tower?"

The answers "In Paris" or "In France" are clearly possible and true answers; however, they can hardly be considered adequate in a context in which the questioner is supposed to already know them (Merin 1999, 198; Van Rooy 2003, 731). For this reason the semantic concept of possible answer needs to be specified pragmatically: the meaning of a question lies in its purpose, or more precisely its speech situation (Grewendorf 1983, 73; Kiefer 1988, 257–258; Ilie 2015), which defines the set of pragmatically meaningful answers.

Pragmatic adequacy is normally assessed considering the criteria of informativeness and usefulness. The first pragmatic criterion excludes from the answer set the (semantic)

answers that are not informative *for* the questioner. Therefore, not only are presumably known answers excluded, but also answers providing information unrelated to the questioner's knowledge (Grewendorf 1983, 68) – excluding, in (1) above, indications possibly accessible only to Parisians (such as "Close to the Le Beaujolais") (Van Rooy 2003, 729). The second criterion concerns the usefulness of an answer, which is related to *why* a question is asked. The purpose of a question normally corresponds to the *epistemic* state of affairs that the questioner wants the addressee to bring about (Kiefer 1988, 265), which can go beyond the informativeness desideratum. For example, in the following question the informativeness desideratum is different from the usefulness desideratum:
(2). Is there anyone there?

The answer "Yes" to this question complies with the informativeness criterion, but it cannot be considered as pragmatically appropriate in terms of its usefulness, as the purpose of the question lies in an implicit, more specific question entailed by the positive answer ("Who is there?") (Kiefer 1988, 259). The purpose of a question can be different from or exceeding the epistemic dimension (Kiefer 1988, 276), and can correspond to a course of action (Grewendorf 1983, 72–73). For example, the individual who asks (1) in Paris does not (only) want to know in what part of Paris the monument is located, but more importantly how to get there. For this reason, answers such as "Get the metro here and get off at Pont de l'Alma," although they do not belong to the semantic answer set, are nonetheless pragmatically adequate because they satisfy the question purpose (Kiefer 1988, 277).

The pragmatic dimension of questions brings to light the need to identify the implicit purpose of a question, which represents the underlying "decision problem" (Van Rooy 2003, 732–733) that the explicit or underspecified questions aimed at addressing (Roberts 2012, 61). In this perspective, the meaning of a question can be established considering how it contributes to resolving the decision problem underlying it – or rather the "big" or "higher-level" question that is entailed or implied by the explicit one(s) (Van Rooy 2003, 736–737; Roberts 2004).

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The Functions of Questions

By distinguishing the semantic and pragmatic levels of questions, it is possible to draw a line between their grammatical and pragmatic (or functional) dimensions. Moreover, the literature stresses how the identification of the function of a question is essential for establishing its possible answers – and thus its meaning. However, what are the functions of questions?

In linguistics the function of questions has been investigated from the perspective of speech acts and discourse analysis. As mentioned above, the notion of question is an illocutionary category (Searle 1969, 67), as it refers to communicative events – or speech acts – that can have different purposes and effects on the communicative setting (Huddleston and Pullum 2002, 866). Like other illocutionary acts, questions have a prototypical communicative function, namely inquiry: they are intended to change the hearer's behavior (in this sense, they are a kind of directive, see Searle and Vanderveken 1985, 56) by requesting an answer possibly not known by the speaker (Robinson and Rackstraw 1972, 15; Huddleston and Pullum 2002, 866), and not presumably provided by the addressee without being asked (Searle 1969, 67). Questions performing this inquiry or information-seeking function are referred to as "real" (Searle 1969, 67) or "standard" questions (Ilie 1999).

The problem arises in the definition of non-real or non-standard questions. The function of bridging the gap in the questioner's framework of knowledge or belief (Robinson and Rackstraw 1972, 16) is opposed to a great variety of functions, some of which have been classified under different labels in the literature, such as rhetorical questions or indirect speech acts. More importantly, the identification of such functions depends on the approach to the analysis of types of questions – whether considering their syntactic dimension (Sadock 1974; Huddleston 1994), their illocutionary force (and indirect speech acts) (Huddleston and Pullum 2002, Chap. 10.4), the nature of the response elicited (Ilie 2015), their function (Kearsley 1976), or the speaker's communicative intention (Athanasiadou 1991). Overall, the distinct approaches result in several types of functions of non-standard questions, which include exam (or memory), commitment, decision-making (proposal, deliberation, invitation), requests, guessing, explanation, persuading, predicting, rebuking (criticizing), and metadialogical questions (Robinson and Rackstraw 1972; Sadock 1974, 120–121; Kearsley 1976, 362; Athanasiadou 1991, 109; Huddleston and Pullum 2002; Ilie 2015; Bardenstein 2022).

These different functions lead to the problem of finding a classification. Existing approaches tend to focus on two types of criteria: the type of response, and the speaker's intention captured through the notion of illocutionary force. The first criterion is used in Ilie's classification (Ilie 1994, 2015, 6), in which the type of action that characterizes the response (whether verbal, practical, or mental) is combined with an interactional dimension (information, uptake, confirmation, etc.). In this view, an examination question requests a verbal response, but no information in the sense of contents unknown to the questioners. A dialogical criterion of classification emerges clearly in Athanasiadou's account (1991), in which the dialogical goals of questions are grouped in two types of dialogical interaction (information-seeking and examination), an illocutionary category (indirect requests), and a broad category of rhetorical questions that includes questions having distinct dialogical purposes – from stating to capturing the interlocutor's interest to expressing feelings.

In education, the pragmatics of questions (or more precisely their function) has been explored in relation to their role in the dialogical process within the classroom. Two distinct approaches have characterized this trend of research. On the one hand, questions have been studied considering their epistemic role, namely how much freedom of response (and thus control over students' learning) is left to the students themselves (Wilkinson and Hye Son 2009). In this perspective, the dichotomy between authentic and inauthentic questions becomes crucial, as the former express the request of a predefined and already known answer, while the latter represent dialogical moves through which teachers elicit a broad variety of possible answers (which they are interested in exploring). On the other hand, research on the cognitive effects of questions has tended to associate questions with different types of thinking, and distinguishing between "lower-level" and "higher-level" questioning depending on whether they encourage lower or higher order thinking (Taylor et al. 2003).

The cognitive approach to the functions of questions led to a classification based on the reasoning (or thinking) they encourage. In particular, Sanders distinguishes 7 types of questions (1966, 3–5), based on Bloom's taxonomy and hierarchy of educational objectives (Bloom 1956)[1]:

[1] Bloom (1956) distinguished between 6 objectives ranked from the lower three levels of cognitive complexity or demand ("surface learning") to the four "deep learning" levels (Irvine 2017). The lowest level is represented by Knowledge, which is analyzed considering its different objects (specific elements of knowledge

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1. Memory: "What is meant by 'gerrymandering'?" (The student is asked to recall the definition presented to him earlier).
2. Translation: "How would you explain the definition of 'gerrymandering'?" (The student expresses the information received using different words).
3. Interpretation: "What is the greatest number of districts that Party A could control if it is in charge of the redistricting and chooses to gerrymander?" (The student uses the notion of *gerrymandering* in an abstract case).
4. Application: "In the present city are election districts adequate, considering the boundaries of each district?" (The student applies the notion of *gerrymandering* to solve a practical problem).
5. Analysis: "Can you analyze whether this piece of reasoning (quotation from a text involving the notion of gerrymandering) is acceptable?" (The student is asked to analyze the reasoning in the quotation).
6. Synthesis: "If the boundaries of the districts in the present city are not adequate, how would you redraw them?" (The student is asked to solve a problem in an original way).
7. Evaluation: "Would you favor having your political party engage in gerrymandering if it had the opportunity?" (The student is asked to take a position considering their values).

Based on Bloom's taxonomy, questions were grouped in two categories, namely lower-cognitive questions (memory, translation, application) and higher-cognitive ones (application, analysis, synthesis, evaluation) (Gall and Rhody 1987; Wilkinson and Hye Son 2009). The first three levels can be loosely compared to a distinction used in reading comprehension between textually explicit (training the memory and attention of a student to recognize the answer in the text) and textually implicit questions, where this latter category elicits inferences that are based on evidence from the text (textually implicit) or the integration of textual information with background knowledge (scriptally implicit) (Pearson and Johnson 1978, 157–162).

The linguistic and educational approaches highlight the need for a pragmatic approach to questions that captures what questions are used for in a specific dialogical interaction. These two models, however, seem to be grounded on almost opposite perspectives, each affected by crucial limitations. The linguistic approaches have attempted to gather and classify all possible functions of questions, while the latter are defined by combining illocutionary forces with other meaning dimensions. This leads to the theoretical problem that distinct phenomena fall under the concept of *response*, drawn from different levels: the interactional (answers), practical (actions; social control), cognitive (mental response; epistemic), dialogical (information-seeking), or illocutionary (expressive) levels. The educational approaches pursued the opposite goal, starting from the effects (cognitive, epistemic) to organize the

such as facts or terms; ways of dealing with specifics, including concepts, trends, conventions; and universals, which include principles, theories, and generalizations). A different level of cognitive ability is constituted by the remaining objectives, collected under the label of "Intellectual abilities," namely the mental processes underlying the organization and use of knowledge for a specific purpose. The lowest level is Comprehension, which includes Translation, Interpretation, and Extrapolation (drawing inferences from trends); it is followed by Application (use of abstraction in a specific situation); Analysis (ability to identify the constituents of communication, such as its elements and their relationships, and its explicit or implicit structure); Synthesis (production of anew communication, development of a plan or operation, and abstraction of new relations); and Evaluation (the capacity to judge the quality of communication based on the evidence and reasoning provided, or external criteria of evaluation).

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types of questions useful for pursuing them. However, this strategy suffers from the limitations of providing categories useful for specific teaching objectives (training specific types of thinking or reading) or outlining a blurred class of questions (authentic ones) that can hardly be operationalized (or even detected).

Dialogical Moves and the Dialogical Purposes of Questions

The aforementioned theoretical accounts of the pragmatic dimension of questions (i.e., their functions) seem to share a fundamental discrepancy between their approach to speakers' intentions and the object described (the question). In those models the speaker's intention is an individual, internal construct represented as the elicitation of a response, or prediction of behavior. However, the object (question) described occurs within a dialogical interaction, either between two or more individuals or between the speaker and an imagined audience. Underlying these accounts lies the problem of moving from the analysis of *individual* intentions and the grammatical form of utterances to capturing an *interactional* goal pursued in an exchange. This difference results in moving from mental representations (speaker's meaning) to communicative joint actions (Kecskes 2008; Kecskes and Zhang 2009), namely dialogues.

The starting point for describing the interactional functions of questions is the definition of the type of interaction shaped by them. According to Walton, different types of questions and answers define distinct types of dialogue, conceived as conventionalized frameworks of goal-directed activity in which the interlocutors take turns to perform speech acts (Walton 1989b). Questions and answers are instruments through which the possible goal-oriented types of dialogical interactions are negotiated, generated, and modified during the communicative process (Kecskes 2013, 50). The most generic types of goal (or joint dialogical intentions) that can be pursued in a conversation have been classified in the theory of types of dialogue (Walton 1989a) in the following categories (see also Krabbe 2003; Walton 2010; Bereiter and Scardamalia 2016) (Table 1, adapted from Walton and Krabbe 1995, 66; Macagno and Bigi 2017; Macagno and Bigi 2020).

A fundamental type of dialogue that characterizes most educational exchanges should be added to this list, namely the examination (or recitation) dialogue. This dialogue type can be considered as a specific variant of the inquiry dialogue, in which the matter under discussion is not an object of knowledge (external to and distinct from the participants to the dialogue) but the reliability, memory, or knowledge of the interlocutor as a source of knowledge or information (Walton 2006b). In this sense the questions that shape this type of dialogue are forms of "inauthentic" inquiry, where the joint goal is not to increase knowledge on a matter, but to assess one of the parties in a kind of *indirect* dialogue on a participant of the dialogical activity.

Based on the aforementioned classification of dialogues types, the types of questions developed in the literature can be classified as dialogue moves, namely dialogical units aimed at proposing a dialogical activity (Schegloff et al. 1977; Gumperz 1982; Sinclair and Coulthard 1992) (Fig. 1).

In this classification, the dialogical level is distinguished from the meta-dialogical (concerning the dimension of comprehension of the communication or message – see van Aalst 2009, 270 – and the conditions of dialogue – see Ilie 2022) and the interactional one (concerning the relationship presupposed by a dialogue). The five dialogical moves (in blue)

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Table 1 Types of dialogue

Type	Initial Situation	Main Goal	Participants' Aims
1. Persuasion Dialogue	Conflicting points of view	Resolving such conflicts by verbal means	Persuading other(s)
2. Negotiation	Conflict of interests & need for cooperation	Making a deal	Getting the best out of it for oneself
3. Inquiry	General ignorance	Increasing knowledge and reaching an agreement	Finding a "proof" or destroying one
4. Deliberation	Need for action	Reaching a decision or an evaluation	Influencing the outcome
5. Discovery	Need to find an explanation of facts	Choosing the best hypothesis for testing	Finding and defending a suitable hypothesis
6. Information-sharing	Personal Ignorance	Spreading knowledge and revealing positions	Gaining, passing on, showing, or hiding personal knowledge
7. Rapport building	Unclear or unshared roles and relationships	Reaching a (provisional) accommodation in a relationship	Acquiring a more strategic role in the interaction
8. Meta-dialogue	Unclear or unshared meanings or unshared purpose of the interaction	Reaching an agreement concerning the interaction	Establishing a more strategic meaning or purpose

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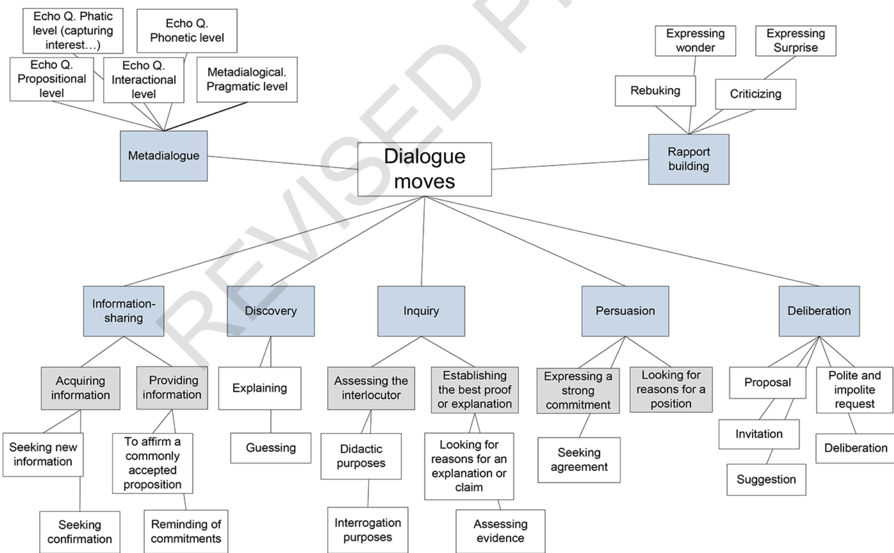

Fig. 1 Questions as dialogue moves

identify different types of goals that questions can pursue, divided in more specific subgoals (in grey). In particular, the categories of inquiry and discovery are closely related, and can potentially generate confusion due to the notion of inquiry-based learning (Rapanta 2022). In the theory of dialogue types, *discovery* concerns the formulation of hypotheses

for explaining a phenomenon, while *inquiry* addresses the process of establishing the best proof or best explanation considering the available evidence. The negotiation dialogue (triggered by questions of the kind, "If I give you X, would you grant me Y?") has been merged with deliberation, as it is a kind of decision-making activity (see the comparable notion of synthesis question in Sanders 1966), even though antagonistic and characterized by parties' conflicting interests.

This classification has two advantages. First, it provides an interactional criterion for the classification of questions, identifying a unique pragmatic perspective (the dialogical dimension) under which the functions of questions can be categorized. The distinction is not between "echo" or "rhetorical" questions, but between the different purposes pursued through them. Second, it can be used practically for connecting questions to types of interaction, and thus shaping the dialogue according to the intended communicative or educational goal. By identifying the types of interaction that can have positive or negative effects on the collective process of knowledge building (Bereiter and Scardamalia 2016, 14), it is possible to detect the most useful types of questions that can be asked for specific educational purposes.

Questions and Dialogues in Classroom Interactions

As shown in the previous sections, authenticity is a complex concept used to capture the relationship between a question and possible learning goals which can be developed through dialogue (Bloom 1956; Sanders 1966). Based on the proposed definitions and dialogical functions of questions, authenticity can be analyzed as a scalar property characterized by three different dimensions: (a) the *dialogical*, represented by the type of dialogue proposed and its subject matter – whether it is external to the dialogue (an object of knowledge) or the interlocutor's capacities (memory, skills, etc.); (b) the *semantic*, represented by the freedom left to the interlocutor in answering, and the possibility of negotiating the dialogue; and (c) the *pragmatic*, represented by the context i.e. whether the proposed dialogue mirrors a real-life activity or is merely defined by and confined within the institutional classroom setting (Widdowson 1978, 6–7).

To illustrate how questions shape different types of dialogue and thus propose more or less authentic interactions, some examples will be provided from a large corpus of dialogue data. The corpus was collected in four European countries (England, Germany, Portugal, and Spain) within a European project aimed at developing a Cultural Literacy Learning Program (CLLP) focused on the development of dialogue and argumentation skills in pre-primary, primary and secondary students. The data used in this paper were collected in classrooms of urban and suburban schools from September to December 2019. Student-student and student-teacher interactions stimulated by text and film materials on social and cultural topics were videotaped and transcribed after obtaining the informed consent of students' parents[2].

The first example represents the classical examination question. The teacher is discussing with the students a short movie they have just watched, and she uses questions to test their memory, attention, or understanding.

[2] Full description of the anonymization procedure can be found in (Rapanta et al., 2020).

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Example 1. Inquiry – Examination

T	Nice. Then what happens? What happens next?
S	He saw the cat and got scared
T	He came out of his house and was seen by?
S	The cat.

These two questions instantiate two distinct types of questions from a semantic perspective, namely an open question (the first one, not setting out a specific type of answer) and a closed one (the second one, which requests filling in a variable). Despite the differences, both questions are aimed at establishing whether the students have understood the story, namely examining their attention and perception in an *examination* type of dialogue. The dialogue is not focused on an external object of knowledge but the students' capacities, which makes this activity strictly confined within the boundaries of the institutional setting in which it takes place. For this reason, it is artificial or unauthentic dialogical activity promoting merely surface learning (lower-cognitive skills).

A distinct type of move is the *inquiry* in the proper sense i.e. an analysis of the evidence and proof in favor or against a specific position. In Example 2, the teacher asks the student to provide reasons to support a claim concerning the interpretation of a character in a short movie.

Example 2. Inquiry – Eliciting proofs

T	How did you know he was a boy?
S	From the room. There were boxing things, there were weights, there was the glove, there was that punching bag.

Unlike Example 1, this question engages the student in an activity (finding and providing evidence) that exceeds the institutional boundaries of a classroom and addresses the personal perspective of the interlocutor. The dialogue is authentic in the sense that (a) it concerns an object of knowledge (and not whether such an object is stored in the interlocutor's memory); (b) it leaves the interlocutor the possibility of answering in different ways (pursuing different strategies of answer), and thus negotiating the dialogical activity; and (c) it mirrors dialogical settings that can be used in other contexts, i.e. it is not defined by and bound to the classroom setting. As a result it promotes higher reasoning skill – in this case abductive justification based on evidence (Walton 2004).

The two types of inquiry can be combined in guiding students towards the development of proofs and the use and discovery of the necessary evidence. In Example 3, the teacher leads the students to ground their claim concerning the character's sadness on evidence (moves 1, 3), and uses examination-inquiry questions to retrieve the relevant piece of evidence (moves 7, 9).

Example 3. Inquiry – Guiding to providing proof

1	T	He felt very sad. So how did you know he was so sad? S11. How did you understand it?
2	S11	From the expression on the face.
3	T	From the expression on his face. Very nice. S1?
4	S1	From the eyes.
5	T	What did the ey-

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6	S	From the posture of his body.
7	T	And from the posture of his body. Yes, but what did his eyes have?
8	S1	Drops were falling.
9	T	Drops were falling. What were these drops S1?
10	S1	His tears.

The inquiry moves at 1 are "open" questions that allow the students to answer in different ways: they can provide information or formulate more complex arguments, which stimulates more "creative" (or deeper) and abductive thinking. This move reproduces everyday inquiries and thus it can be considered authentic. The "closed" (variable) questions in 7 and especially 9 are used by the teacher to guide students in the development of their answers by requesting the clarification and expression of reasoning steps left implicit, thus modelling the structure of their replies (see also Jenkins and Lyle 2010). These questions are only lowly authentic, as they do not leave much freedom to the interlocutors, seeking specific clarificatory information in a dialogical context that is rather rare outside the classroom, but are still focused on an object external to the dialogue.

The use of *information-sharing* questions can be an instrument for eliciting students' personal views, feelings, or experiences on a matter. This type of question can be combined with more complex types of information, namely the explanation of the phenomenon reported (Example 4).

Example 4. Information-sharing – Eliciting personal views and explanations

T	Would you feel sad [if you were alone on the moon]?
S	And lonely.
T	Sad, lonely. For what reason would you feel sad?
S	Because there's no one there.

With the first question, the teacher invites the student to share their own feelings in the imaginary situation of the character portrayed in the movie, engaging them in sharing their views. The second question requests a different type of information, namely the explanation (personal, in this case) of this feeling. The question is not argumentative as the feeling is not doubtful; rather, the student simply shares information about how this feeling is generated. In both cases, the dialogue proposed is authentic: the object of the questions is external to the dialogue itself (a personal perspective) and their goal – comparable to other everyday dialogical exchanges – is to elicit the expression of a personal view, on which to possibly develop other moves (as illustrated by the next example below).

Information-sharing questions can be related to *persuasive* or argumentative replies, especially when the information sought is a viewpoint on a controversial matter, which can (and often do) lead to reasonable disagreement (Hand 2007) and thus the need to be backed by arguments and evidence (Hand 2008b, 217). For instance, in Example 5 the teacher asks for the personal view on the relation between gender and sports.

Example 5. Information-sharing – Eliciting viewpoints

T	And [the father] thought [dancing] was for girls … and what's your opinion on the fact the father thought it was for girls?
S	I think it doesn't matter whether dancing is for girls or for boys, it's all the same, like football or rugby, they are all sports and hobbies are for everybody, there's not for boys or girls because we are all equal.

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The question engages the student in the negotiation of possible dialogical activities. The teacher's goal is to elicit the expression of a personal view in an authentic information sharing dialogue that closely mirrors an everyday dialogical activity. Moreover, the student has the option to decide how to answer, in the sense that they can choose whether to continue the information-sharing exchange or to move to a more cognitively engaging dialogue. In this case, by implicitly acknowledging that the information provided is potentially contestable, the student backs it up with an argument shifting to a persuasion dialogue.

The difference between this move and persuasion moves emerges in Example 6, in which the teacher engages the student in an argumentative exchange by asking two distinct *persuasion* questions concerning the gender of the character (a mouse who wants to be a ballerina).

Example 6. Persuasion

S	[it is a GIRL mouse!]
T	Why? What makes us think that?
S	Well, because she dances ballet.
T	What's that, a boy cannot dance ballet?
S	Well, it's just that … she also had a girl's face … and it's dressed like a girl.

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The dialogue mirrors an ordinary dissent in which one interlocutor casts doubt on the other's position (Walton 2006a). The first question requests a reason that can convince the interlocutors of the student's viewpoint. The second, instead, makes explicit the tacit premise in the student's argument and challenges it, which leads the student to provide a different argument. By asking authentic, critical questions, the teacher helps students elaborate on, clarify, and support their own arguments and viewpoints (Hand and Levinson 2012).

Another crucial use of persuasive questions consists in leading the interlocutor to draw inferences from their own viewpoint, and thus defining their own positions and commitments in a kind of Socratic dialogue. In Example 7, the teacher is continuing a dialogue on the meaning of *home*, to which students contributed with different definitions.

Example 7. Persuasion – Drawing inferences

T	Ah, so you say that in order to be well at home, we must have friends and have both mum and dad, you say?
Ss	Yes.
T	So you told me that the house is not enough just with the protection?
Ss	Yes.
T	And it isn't enough to offer security that you told me about?
Ss	Yes.
T	Why, since you told me that the house gives us all these?

With her questions, the teacher leaves very little freedom to the interlocutors, forcing them to acknowledge the implications of their views to show how the other definitions of home were incomplete and thus need to be modified and enriched. For this reason, the authenticity of these questions is limited, even though their object is external to the dialogue and the exchanges can be imagined as occurring outside a classroom – in very specific but rare situations.

Discovery moves have been analyzed in the literature of Philosophy for Children as tools for encouraging discussions on conceptual questions. By confronting young students with concrete dilemmas or problems involving specific concepts, it is possible to lead them to discover philosophical answers or reflect on everyday concepts (Hand 2008a). More generally, discovery questions elicit possible interpretations or explanations of a phenomenon, which can be broader ("What do you think this movie was about?") or more specific, such as in Example 8, where the teacher asks the students why the character of the movie (who lives alone on the moon) is playing the trumpet.

Example 8. Discovery

T	Why do you think he plays the trumpet?
S	Because it would remind him when he was on Earth.

The why-question addresses an open problem – the interpretation of a scene in a movie – to which the student replies with a possible solution. The question mirrors an ordinary interpretative dialogue concerning a movie, leaving to the student the choice of replying by providing a personal opinion, an argument, or evidence. A more specific type of discovery question consists in combining the interpretation of a phenomenon with the request for backing the interpretation with evidence or reasons, such as in Example 9.

Example 9. Discovery – Requesting reasons

T	What are the father's feelings as soon as he entered the house and entered the room?
S	Disappointment.
T	Why disappointment? Explain it to me a little. Why?
S	Because the little mouse did not want to play boxing.

The teacher's first question is lowly authentic: it leaves very little freedom for negotiating the continuation of the dialogue, and it can be easily imagined as aimed at inquiring about students' understanding even though it could also be asked in contexts that are not strictly educational. However, the second question (an "inferential question," see Jenkins and Lyle 2010, 468) engages the student in an authentic dialogue focused on the reasons underlying a viewpoint, which can be continued in different ways (providing information, explanations, arguments, or evidence).

In the education literature, *deliberation* moves have been extensively analyzed in connection with deliberative democracy – in particular discussions on decisions concerning controversial civil or political matters (Hess 2009; McAvoy and Hess 2013) – and ethics (Hand 2014). These moves involve students in an action-oriented (decision-making) activity that can lead to further inquiry into the deeper reasons for a choice – thus shifting to inquiry, persuasion, or discovery dialogues (see for instance Jenkins and Lyle 2010, 466). Discovery moves can also be used for stimulating students' identification with a specific situation/character that they need to interpret. In Example 10, the teacher asks students to provide a solution to a problem that they face.

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Example 10. Deliberation

T	What would you do if you were the Baboon [left alone on the moon]?
S1	Morse code.
S3	Morse code.
T	Explain that.
S3	Well, since he can turn on and off the Moon, then we'd do Morse Code to communicate with humans.

The teacher proposes an authentic fantasy exercise that can be similar to the fictional stories younger students normally invent, leaving them the complete freedom to continue the dialogue by narrating a series of actions or justifying a decision based on the available evidence.

Meta-dialogical moves are normally used for clarifying the meaning (or comprehension) of an utterance or emphasizing an aspect thereof. Moreover, they can also be used for discovering and sharing the meaning of specific concepts (Hand 2008a). In Example 11, the teacher asks students to provide their definitions of the concept of *home*.

Example 11. Meta-dialogical – Discovering concepts

T	What is home?
S	[I think home means {unclear} really nice people].
S5	That you live in.
T	What is home? Somewhere you live? OK. I'll write that in here. (Writing) Some […] where you live. S33.
S33	It's somewhere safe.
S23	It's where we sleep.
S19	It's somewhere you buy it.

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The question is aimed at eliciting students' views on what home is in an authentic effort to discuss the idea, leaving to the students the choice of either providing their own perception of the entity referred to (information sharing) or describing a more general concept (metadialogical). This philosophical exercise (White 1992) mirrors some existential questions that young students ask themselves, guiding them to find the best strategy for addressing them.

Conclusion

The concept of authentic question is used to refer to a crucial educational goal and concern, that of using questions for promoting specific learning goals by engaging students in dialogical activity. This practical objective can be pursued only by addressing first the descriptive problems of determining what authentic questions are and identifying them based on clear criteria and reasons. However, the literature offers limited guidance on how to solve these crucial issues, due to the complexity of the linguistic phenomenon analyzed (at the same time a move and a sentence type) and the open challenge of capturing, justifying, and mapping pragmatic dimension of such authentic questions. The purpose of this paper was to

attempt to tackle these challenges starting from the problem of the pragmatics of questions. To this purpose a dialogical approach was proposed, which can represent the joint intentions that are pursued by questioning – namely the dialogue types that can result from and are defined by asking a question.

According to this perspective, questions are regarded as dialogue moves, and they are classified according to the macro-categories of possible dialogical games that they propose (such as retrieving information, encouraging arguments, or eliciting explanations or proposals). This dialogical dimension was combined with the semantic and contextual one to define the notion of authenticity as a measure of the skills that a question is intended to develop in a given context and activity through the dialogue proposed. While more authentic questions open exchanges that reproduce and train the interlocutors for different types of everyday challenges, less authentic ones tend to impose strictly constrained dialogues focused on a student's capacity or performance and contextually limited to a classroom environment.

This dialogical approach to authentic questions intends to highlight how asking a question involves much more than eliciting an answer of a given type. It is rather the proposal of a joint activity, which can be open to negotiation or imposed, appear as artificial or natural, and be aimed at different goals that require different abilities. The literature increasingly regards recitation or test questions as having limited effects on students' knowledge building (Scardamalia and Bereiter 1991, 48; Scardamalia and Bereiter 2006; van Aalst 2009, 261). As shown in our examples, from a dialogical and pragmatic perspective there is nothing inherently wrong with inauthentic or lowly authentic questions (Turgeon 2015), especially in a context in which the questioner is expected to know the preferred answer. The problem rather lies in why the questioner chooses to engage the interlocutors in a specific type of dialogue. This paper shows that the concept of authenticity of a question can be reframed in terms of awareness that the choice of a dialogue game through a question can lead to specific types of answer – such as explanations, justifications, reflections on word meanings, or practical solutions – each pursuing specific educational goals (Scardamalia and Bereiter 1991; White 1993; Bereiter and Scardamalia 2016).

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Declarations

Conflict of interest Not applicable.

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